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AND CHERAW ADVERTIZER.

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M. MACLEAN,
EDITOR AND PROPRIETOR

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From the Carolina Planter.

HOGS—NO. 2.

In a former number the proposition is I think established, that the Planters of South Carolina can save more than twenty per cent clear gain by raising their pork instead of growing Cotton wherewith to purchase it; and this even according to the usual and unprofitable plans of corn feeding.

It may be a further question whether some system of raising hogs, so as to expedite their growth, may not increase the gain or effect a saving of fifty per cent:—from my own experience I am fully convinced this position can be sustained—Evidence can be afforded of a planter in Fairfield District, who last year butchered one hundred and fifty hogs of his own raising, averaging one hundred and forty pounds nett (sufficiently fat,) which, exclusive of a little trifling care and labour, did not cost him over seven bushels of corn per hog, and which with the corn at seventy five cents per bushel furnished *the pork* at three dollars and a half *per cwt:* adding the fifty per cent to this, the amount will only be five dollars, twenty five cents,—a price still seventy five cents less than the usual cost; and yet this planter will say that with very little additional expense and improvements the same hogs might have been made to weigh two hundred pounds nett.

Suppose then fifty per cent. to be saved of the one and a half millions of dollars paid by the state (according to my rough estimate) for Kentucky or Western Pork, and of that amount five hundred thousand dollars be paid by our planters, a loss is thereby sustained alone on the planters' purchases of two hundred and fifty thousand dollars to the state; and that is my estimate of the quantity was not extravagant, will be seen by the communication of Dr. Hardy of Ashville from the returns of the Turnpike Gate, if thereto we add the Bacon imported to Charleston. Will South Carolina therefore continue to throw away a quarter or half million of dollars annually—for what? For a Kentucky whistle!

I shall now propose a plan of raising and fattening hogs, which if strictly pursued, I feel confident, will prove to every experimenter my assertions; and although I have not in the same year had all my plans strictly attended to, yet I have at different periods practised all the rules here prescribed, so as to know their success. The first object, and one of no small consideration, is the breed; for whatever may be said about the feed, I am convinced that upon the breed there depends not less than twenty per cent in the raising. This branch of the subject I leave to be discussed by others, merely remarking however that after the best breed is obtained unless proper attention is paid to selections and crosses, *it will soon degenarate.*

A second important point is to secure a sufficient progeny each year; seeing that we need not expect *hogs* without having attended to them when *pigs.* From ignorance in this matter I apprehend most failures occur. Under proper regulations five sows may raise more pigs than twenty, if badly managed. Previous to littering, they should be put in separate lots or fields, or the pigs are not only liable to be *overlaid* by stock hogs, but one pig-eater, (a pest very common with the Cobbett breed), may destroy the whole progeny.

A third object is to clear the stock of lice; with some old planters, it is a maxim and one in which there is considerable truth—"keep the lice from your hogs, and they will raise themselves." This cannot be effectually done without causing the whole hair to be shed off every spring. By adding brimstone or sulphur to slop, and feeding a little higher for eight or ten days in the month of May, this will generally be effected. If any one hog fail to be relieved, shear it, or kill it, or it will again infect the whole stock.

A fourth matter to be regarded, is the destruction of Kidney worms,—very common after hogs feed upon oak-mast or peas. Tar and salt thrown into the sloptrough frequently whilst the hogs are feeding on such food, will prevent their breeding; and soft tar rubbed into the hair, over the kidneys, will destroy or remove them.

5th. Whatever may be said for or against feeding on Cotton-seed, my experience for thirty years condemns the practice; and I now believe where they are *food* to two hogs, they are *poison* to the third. Through inattention to the foregoing rules, frequent failures may be anticipated.

6th. The sixth consideration, and one highly important, is, to adopt the cheapest and most lucrative plans of feeding or raising hogs. For this purpose, pastures, orchards and slops, must be provided. Having tried green-rye and oat pastures sufficiently, a decided preference in my judgment is to be given to the former, because the rye comes on in the winter season, when most needed and besides, bears grazing far better, as the oats when grazed will be drawn out by the roots.

A still better winter and spring pasture is a field where the wire grass (so much dreaded by planters) is about to take possession: this does not answer well where the field is not cultivated; as without, the grass runs on the surface, and the roots or stems are destroyed more or less by their exposure to the winter frosts, neither are their roots so large or pulpy. This last winter I have had hogs kept fat—on lands not cultivated—without any other food than this grass, and their feeding on it has proved an effectual plan, and the only one I have discovered, to destroy it.

The green rye may be used with one fourth expense less than corn feeding requires: after the rye ceases to afford grazing, sow the same field broad-cast with the red Mississippi pea about the middle of May; and before frost, turn in hogs intended for pork the following winter. After the peas are off, turn the pea-vine under in a green state *with a twister* or some other suitable plough. But previous to the ploughing, sow the second crop of rye for the next year's grazing. This succession will soon fertilize exhausted lands, so as to pay the planter for all his labour, exclusive of the benefit to his hogs; though this has not been calculated in my estimate.

On some high ridge, or as far from a water course as convenient, and upon exhausted lands, a peach orchard should be set out, with good soil, however, deposited in the holes prepared for planting the trees. The greater variety of peach fruit, the better; because not only of their succession, but some of the varieties being most certain to bear fruit. In the gully-holes, hedge-rows and fence-corners, plant as many varieties of the plum as convenient. Sow this orchard in oats; and when the oats are yellow, turn in the hogs. Between the oats, peaches and plums, if the field is large enough, a sufficient summer-range is afforded. Some contend that oats will destroy an orchard; but I have used a peach orchard more than twenty years, and the trees are yet flourishing. It may be that this sound conditinn of the orchard is attributable to the hogs treading the ground under the trees so as to destroy worms—In addition to what has already been said of oats, I would observe that they may be sowed and fed to horses and mules, and then the hogs to be turned in for taking up the wasted grain; the only way I think it *profitable* to raise oats, unless for seed.—Another preparation for hog range is the artichoke, which may be planted on the river, creek and branch-banks, hedge-rows and fence-corners; and in the great profits of this root, my experience is confirmed by the publications of a writer in your journal upon it as a food for hogs.

Thus far is provided a winter, spring, and summer range, for the raising of hogs.—Now add to this the stubble and corn-field pastures, the wood-range, and a little corn occasionally, and the hogs when fattened may be brought at two years old to average one hundred and seventy five pounds nett. But they may be easily brought to reach two hundred pounds nett, if in addition to the above, the following rules are practised: Raise turnips, sweet potatoes, squashes and pumpkins; and having prepared long troughs, take a large boiler or kettle and provide slops of these articles for the hogs, always using salt in the slops,—and according to their less or higher feeding upon this food, they may be made to weigh from two to three hundred pounds each, or even more, if of a choice breed.

7th. After all, the most expensive part of the process consists in fattenning for bacon: for this, sow peas in every corn field either in the step or broad cast, and by raising enough of them to feed the fattenning hogs bountifully, for five or six weeks, two or three weeks of corn-feeding will then be sufficient. To prevent the peas from injuring hogs, the use of salt and tar (used as stated under the fourth branch of this communication) will be effectual: care should be taken to have the hogs *well fed on corn* just before turning them into the pea-fields—they should not be turned in empty—or to have them turned in on a day when the peas are swollen sufficiently by rains.

In the corn-feeding much grain may be saved by grinding and souring the corn—a course in my opinion far superior to that of boiling it.

In fattenning, salt should be freely used, especially where the hogs are fed on peas; for this kind of food creates a strong propensity with the hogs for salt, and if it is not given them, they are sometimes driven to eat greedily of clay.

Let all the above expenses be calculated, and under any circumstances, I am persuaded, the highest estimate cannot bring the the pork to cost more than three dollars and a half or four dollars per cwt. In the calculation it must not be over-looked, that the expenses of the rye and pea pastures, and the orchards, are more than balanced by the improvements of the lands; besides if a grove or other place is left where the hogs are fed, located to collect the manure the valuabld manure thus collected of course diminishes the expense. From the manure deposited by the hogs, my peach orchard has improved for twenty years; and to improve lands entirely exhausted, plum orchards are amongst the most valuable means to which we may have recourse. Wheat and rye fields after harvest may be sowed in broad-cast, so as to bear freely, afford food for fattening hogs, and then the pea-vine to be turned in green, with another sowing of grain, and so on, in succession; for having done this last year, I know no plan for improving lands either cheaper or more speedy.

The only difficulty in the way of all this process is to get an Overseer to attend to rules without the personal attendance of planters or employers. Why is it so? Let planters write down their rules, and make *dismission* the prompt penalty of failure to enforce them. Let them take in the estimate of five or six bales of cotton to the hand, the bushels of corn, rye, peas, oats and so on, and the quantity of Pork, and let Overseers know they are to receive the credit due them for the extra crop. This would operate as a stimulus to industry and improve the general husbandry of the plantation. But whilst employers talk of cotton, and cotton only, and Overseers, expect no credit for any other articles of produce, they will not hazard their reputation as Overseers in permitting it to be said of them that they made *a short crop of cotton*, although the granary and smoke house may have been well filled. The Cotton must be made, if Pork, Corn and all things else have to be purchased; and the fault in most cases rests with the employers.—The sooner this ruinous policy is abandoned, the better will it be for the community; and the present is an auspicious time for every planter to give it the consideration which it deserves.

J. D.

PROFITABLE FARMING.

It is generally known that the soil of New England is no naturally, with few exceptions, as fertile, as that of some of the middle states, yet in point of agricultural improvement, New England is thirty if not fifty years in advance of all other states, with the exception of New York. This is owing in a great measure to necessity—"the mother of invention." Her population, we now speak in general terms, is dense, industrious, and frugal, and endeavor to turn whatever they have to the best advantage. Their cold and sterile soil, swamps, bogs and peaty marshes, have by the careful hand of severing industry become highly productive, and sources of considerable profit to their owners. The practice of New England farming is deserving the serious consideration of every farmer in the land. Our New England friends know how to subdue stony lands—to reclaim swamps and peaty meadows—to make manure on a large and profitable scale—to prepare the ground well for the coming crops—to give them all due attention, in their growth, harvesting, preparing for market, and in a word, to turn a penny often.—They are not *above* their calling. A true New England Farmer considers it no disparagement to raise *truck*, as they call it, for the supply of the market. Their practice is varied, and profitable. While some conduct the operations of extensive plantations to a great profit, others, on a few acres, not only live, but rise above the world. The secret of all is—they make their land rich—thoroughly till it, and devote to it all proper attention—this is the grand, the only secret—thorough care and cultivation.

The following facts, gathered from the "*Farmers' Visiter*," an Agricultural newspaper, conducted with distinguished ability by Governor HILL, Concord, N. H., will no doubt prove interesting to our readers. They show what may be accomplished by careful and attentive cultivation.

"Mr. JAMES HILL, of West Cambridge, has taken in ninety successive days, five thousand dollars in cash, in Boston market, for articles raised on his farm.

"Mr. ISAAC LOCKE, of the same town, has raised the present year, thirty barrels of Quinces, which sold on the ground for seven dollars a barrel; he has also sold in the same way, the present autumn, several hundred bargels of Baldwin apples, at three dollars per barrel.

"The value of the *Strawberries* raised in West Cambridge and sold in the Boston market, is more than was taken thirty years ago for all the agricultural products of the town put together. The *apple orchards* of this town are extensive. Two hundred, three hundred, five hundred, and sometimes a thousand barrels of carefully picked apples are produced in a single year by one farmer

Mr. GEORGE PIERCE of the same town, cultivated only *seven acres*, and yet he has taken in the market for produce, the present season as by memorandum kept, *nearly or quite* four thousand dollars. This season, very early, among his articles for the market, was about one-third of an acre of the dandelion, which grows spontaneously in many mowing fields—these he with some difficulty obtains from the seed; but the crop turns out very profitable. He had about an acre of strawberries, from which upwards of two thousand boxes of that fruit were picked last summer; these, at thirty seven and a half to fifty cents a box, for which they readily sold in the market, produced not a small profit on a single acre.

Mr. PIERCE, also, cultivated the *Raspberry*, which thrives with great luxuriance. He thinks he could make of the *Blackberry*, which grows in the hedges and among piles of decayed wood or rocks in neglected fields, a profitable article."—*Am. Far. Comp.*

From the American Farmers' Companion.

IMPROVE THE SOIL—AND GO AHEAD.

No farmer "goes ahead" unless he raised an abundance of grass. Where there is but little grass there is always a short purse, said a man of extensive observation and great experience; the reason of this must be so obvious as scarcely to need an explanation; for of grass comes manure, and manure is the philosopher's stone, which turns every thing into gold, provided it is well husbanded and judiciously applied to the soil. The experiment of trying to raise profitable crops on worn out lands without manure has been made thousands of times and always resulted in the same way, it is therefore unnecessary to repeat it again. for disappointment and shame will always attend it. But, says the man of the poor farm, how am I to help repeating this everlasting abortive experiment? Why, in the way you help doing any thing else which you know to be wrong; *by not doing it.* Well, how am I to live if I don't go on in the old way? Go to work in earnest, determine to reform, and do better; instead of spreading your manure over fifteen or twenty acres, cultivate but one third or one half the quantity of land; go just as far as you can to do justice to the soil and to yourself, and no further. Don't go one inch beyond, make your land *feel* the effect of the manure, don't tantalize it with a mere smell of it. What would you think of a neighbor inviting you to dine and when the time arrived you were only permitted to smell the good things but obliged to keep hands off. You would think he was a stingy mean fellow, and you would not go into that trap I'll vouch for it. Now if your old worn out fields could talk and tell what they think of their owners, vociferate their griefs, what a table of woe would they not develope? It might be something on this wise. That mean, stingy, stupid old fellow has been scratching over me these forty years and more, and though providence has always benevolently furnished me with plenty of drink of the purest and best kind, yet have I never had a *full meal* during somewheres near half a century, and for more than four fifths of that time I have been left to snuff the air and shift for myself, without any sustenance being offered me, and yet it is expected of me to produce crops equal to what I rendered in the days of my youth, when my belly was full of meat, and it is nearly over with me unless help comes from the dunghill or some other quarter. This everlasting scratching my hide may go on to all eternity with still less success, till my owners and all their worthless, lazy progeny to the seventh generation, may be starved out of house and home, unless an adequate quantity of good, wholesome and nutritious food be furnished me to resuscitate and invigorate my exhausted system, and to enable me to put on my *green mantle* as I was won't to do in my earlier and better days.

Farm *poor* land *poorly*, and *poverty* will be your lot whatever your name may be, but manure the soil, enrich it, farm it well and keep it in a regular advance of improvement by raising an abundance of grass, and prosperity will smile upon you and yours if so be you are virtuous.

WEST.

From the American Farmers Companion.

Lucerne—Manners, Customs, &c.

Frank.—Father, you said you would tell more about the Island of Jersey—since then, I have seen an account of the growth and produce of Lucerne—a crop which you say grows there;—which is truly astonishing. I find that it yields four crops for hay during the summer, and after that, abundance of feed for cows and sheep. Is it a species of meadow grass or clover?

Father.—It is much like a narrow leaved clover, but the blossom is very unlike, being of a beautiful blue color. The growth and produce is, as you say, truly astonishing; and having had repeated opportunity to make myself acquainted with the crop in every stage of its growth, from its cultivation, I am able to speak very decidedly to its great superiority over every other, provided the soil be suitable, and the culture well attended to. The crops to which I allude were so remarkably productive, and I had such constant access to them, that I was induced every evening, to enter into a journal, whatever had transpired during the day, worthy of observation; but for this circumstance, it would be out of my power, at this distance of time, to speak so decidely as to their rapid growth and large yield: I have now, however, an opportunity to quote *chapter and verse* from this journal, which I will do, for your information.

The Rev. Mr. P. having a field of an acre and a quarter, which had been suffered to run to weeds and bushes, determined to clean it, and seed it with Lucerne, he had it therefore trenched with the spade, to the depth of the staple of the land, which was in some places very shallow, the substratum being a hard gravel. By this operation, the richest part, or surface soil, was turned down on the gravel, and the subsoil was brought to the surface to be enriched by future dressings. The work was done for fifty cents per perch, of twenty-two feet square, and the seed was sown broadcast and harrowed in by hand. On the appearance of the plants, they were not supposed thick enough to form a crop, but by careful management the field has produced immense crops, both of green food and of hay. The journal commences, with

FIELD NO. I.

September 13th. Mr. P's. field of Lucerne, measuring one acre and a quarter, after soiling two horses and a cow during the whole of the summer, has already given three crops of hay, on that part of the field which has not been cut for soiling, to the estimated quantity of five tons. The fourth crop now growing, measures two feet in height.

Sept. 21st. The fourth crop of Lucerne mown this day for hay.

Sept. 24th. The hay carried in excellent condition: the weather having been dry and hot, the only preparation requisite was, to turn the crop once only; this crop is equal to any of the preceding cuttings.

Sept. 26th. A portion of the field, from whence gravel had been dug, and the part levelled, has always dried up after producing one crop of hay in the summer, the substratum being impenetrable: that spot has been this day covered to the depth of five inches, with fresh earth, preparatory to trenching and re-sowing.

Oct. 18th. The trenching of the gravelly spot has been delayed, but the shoots of the Lucerne have penetrated the earth through a space of five inches, and it is now determined to allow it to remain untrenched.

Nov. 23d. A fifth crop will not come to sufficient maturity for hay, but there is excellent food for horses and cattle.

April 6th. The gravelly spot is the best and earliest part of the field; scarcely an inch in space, without a vigorous shoot of Lucerne.

May 6th. Commenced mowing the crop of Lucerne for soiling, a remarkably heavy crop, more than two feet in height.

11th. The first crop mown for hay this day. A space six feet square, taken as a fair average of the field, yielded twenty-three pounds in weight as soon as cut; after one day's exposure it had lost eight pounds in weight, showing that a gallon of water had evaporated in twenty-four hours, from this small quantity of green food.*

23d. The hay carried in good condition—not injured by five rainy days, the crop lying light, by means of its large stalks, requiring only careful turning now and then.

26th June. A second crop mown for hay, measuring two feet eight inches in height. The weather has been remarkably hot and dry, the result has been, a growth in the crop of two inches in height every twenty-four hours, the last four days.

July 17th. The third crop of Lucerne measures seventeen inches in height: the weather is extremely hot, and dry, all the grasses are parched, and farmers are compelled to feed their cattle on hay; the Lucerne grows away as if it had a shower every night.

22d. The crop on the gravelly spot has again failed; a first and second crop come earlier and grows more vigorously on this part of the field than on any other; but after that, it suffers for want of a depth of soil, affording a familiar illustration of the parable of the sower. (Matth. xii. 5th & 6th verses.) The seed which fell on stony ground immediately sprang up, because it had not much depth of earth, and consequently soon felt the influence of the sun, but when the sun was in full vigor, it was parched, and for want of nourishment, withered away.

Aug. 7th. The third crop of Lucerne mown this day for hay; a very heavy crop, many of the plants in blossom. From the first to the second mowing, one month and fifteen days; from the second to the third cutting, one month and eleven days; after this the field was rented to a tenant for £30 sterling per annum.

FIELD NO. II.

Sept. 5th A piece of land was sown this day with Lucerne seed of this summer's growth, unaccompanied with any crop.

March 30th. The Lucerne sown on the 5th of last September, with seed of that summer's growth, has stood the severity of the winter, and the crop measures six inches in height this day.

May 4th. Cut the first crop measures six inches in height this day.

June 14th. A second crop mown this day, equal to the first.

July 14th. The third crop mown this day, twenty-six inches in height.

August 27th. The fourth crop mown for this day, equal to any of the preceeding.

Sept. 5th. It was on this day last year that this crop was sown with seed of that summer's production: the fith crop from which measures a foot in height this day.

FIELD NO. III.

Major T. sowed a field with Lucerne, in May of last year, unaccompanied with any crop; three heavy cuttings were taken for soiling during the summer, and on the fourth of May of the present year, it was mown for hay, a very heavy crop: thus giving four crops, in the space of one year from the time of sowing the seed.

FILD NO. IV.

Colonel T. has a field of Lucerne, of four acres in full vigor; the crop, after cutting, measured three feet, seven inches in length. He mowed a third crop for hay from this field on the 21st of July.

FIELD NO. V.

M. A. Esq. In breaking up an old unproductive meadow, for the purpose of seeding it with Lucerne, adopted the following made In September, the land, was ploughed to the full depth of the soil, and sowed with winter tares, or vetches: these were cut for hay in May, and yielded three tons per acre. The land was immediately ploughed and repeatedly harrowed, and the weeds were collected and burnt: a plentiful crop of seed weeds soon made their appearance, which were ploughed down; the land was again harrowed, and the weeds were again collected and burnt; this was repeated, until the soil was as clean as a garden, when it had a very thick coat of well rotted stable dung, which was very carefully turned in, and Lucerne seed was sown in September, without any other crop; and during the next summer, it was cut five times, either for soiling or for hay; the fith crop, for soiling, was commenced cutting on the 26th September.

So far the journal, which needs no comment.

*Twelve tons, eight hundred and fifty pounds per acre.

AGRICULTURAL ANALYSIS.

To determine the value of any soil, or to be able to correct any fault in the original constitution, or any deficiency arising from improper cultivation, it is necessary that the nature and proportion of the substances composing it should be understood. In agriculture this examination is termed analysis; and in its simplest, yet still effectual method, may be practised by every farmer. The implements used are a pair of scales, accurate to the tenth part of a grain; a crucible; some muriatic acid, and a few small vessels of china or glass.

The earth to be tested by a farmer, should be taken from a few inches below the surface, and be an average specimen of the field, or the soil to be examined. The quantity to be examined, say two or four hundred grains, is to be slightly pulverized or well mixed together. Put of this two hundred grains, in a crucible, and heat it to three hundred degrees of Fahrenheit, or bake it in an oven heated for bread for fifteen minutes; cool and weigh. This will show the absorbent power of the soil, and as this is depending mainly on the animal and vegetable matter, if this loss is considerable, it is a decisive proof in this respect of fertility. The absorbent power varies from one to twelve per cent.

After weighing, heat it again in the crucible to a red heat, until the mass shows no bright or sparkling particles, stirring it with a glass or iron rod; cool and weigh, and the loss will be the animal and vegetable matter in the soil.

Take two hundred grains of the dried earth, mix it thoroughly with a gill of water by stirring it for several minutes. Let it stand for three minutes, and turn off the sediment in the first glass at a high heat, weigh, and it gives the silica contained in the soil. Let the water turned off settle clear, turn off, dry it at a high heat and weigh; this gives the alumine or clay.

Put into a suitable glass or flask, one-fourth of a gill of muriatic acid and water in equal proportions, and balance the scales carefully. Put into this mixture one hundred grains of the earth, let it stand till all the effervescence has ceased; which will sometimes be an hour or more; carefully note the weight required to again balance the scales, and that may be set down as the weight of carbonic gas expelled, say six grains. Then as forty-five, is to fifty-five, so is this weight to that of the base, or the lime. In this case the lime would be seven and one-third per cent.

To ascertain if the earth contains iron, stir the muriatic acid and water with a strip of oak bark, and if iron is present the liquid, bark will turn dark. To ascertain the quantity, put in prussiate of pot-ash, till it no longer forms a blue precipitate, let it settle, heat the deposit to redness, carefully weigh the remainder, which is oxide of iron.

To determine the presence of gypsum, take one hundred grains of earth, mix one-third the quantity of powdered charcoal, keep it at a red heat in a crucible for half an hour. Then boil the earth in a pint of water for thirty minutes, filter the liquor, and expose it for some days in an open vessel. A white depost will be sulphate of lime, and the weight will determine the proportion.

These processes are all simple, and can be performed by any one. By them we obtain 1st, the absorbent powers; 2d, the amount of animal vegetable matter; 3d, the silica or sand; 4th, the alumine, or clay; 5th, the carbonate of lime; 6th, the oxides of iron; and 7th, the gypsum or plaster of Paris. The salts exercise a great influence on vegetation; but as they principally depend on the animal and vegetable matter in the soil, and as the determining their qualities and kinds are too difficult for the analysis of the farmer, the processes are omitted. The above ingredients are all that exert a marked influence on the fetility of soils, and on their proper proportion its goodness depends. If soil contain too much silica or gravel, the are porous; and if too much clay, retentive. The last is usually the worst fault, and may be known by the water standing upon it after rains, remaining unsettled for a long time, owing to the clay held in solution. Wheat winter kills on such soils; on calcareous gravelly ones rarely. Good soils usually contain from sixty-five to seventy-five of silica; from ten to sixteen of alumine; from four to ten of lime, and varying proportions of vegetable matters, animal and mineral salts, &c. The analysis of soils, forms one of the most decided steps in the improvement of agriculture, as it clearly points out what is wanting to remedy any defect, and give ease of working, and abundance in product. Every farmer should understand the nature and composition of his soils, and may do so with little time, and at a mere trifle of expense.—*G. Farmer.*